AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 1. This sheet, which includes Fig. 1, replaces the original sheet including that Figure.

Fig. 1 has been amended to show the system elements described in paragraph [0028] of the main body of the specification.

Attachments: Replacement Sheet
Annotated Sheet Showing Changes

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 84-122 are now present in this application. Claims 84, 103, 105, 109, 112, 114-115, and 119-121 are independent. Claims 37-86 are canceled without prejudice. Claims 84-122 are newly added. The specification and drawings are amended. No new matter is involved. Basis for the ranges set forth in the claims is found throughout Applicants' originally filed application in, for example, tables 6, 7 and 17 and in paragraph [0049]-[0096]. Basis for the claimed end product moisture content is found throughout Applicants' original disclosure including, for example, in Applicants' Summary of the Invention section. Basis for the UIP increase in distillers solubles in claim 108 is found, for example, in Table 17.

Reconsideration of this application, as amended, is respectfully requested.

Personal Interview

Applicants acknowledge with appreciation the courtesies extended by Examiners Mahafkey and Hendricks to Mr. Haschen and his personal representative, Mr. Webster, during the personal interview held on February 22, 2006. During that interview, Examiners Mahafkey and Hendricks agreed that this Applicant discloses patentably distinct subject matter from the Julien

reference, and ways of claiming that patentably distinct subject matter were discussed.

Objection to the Drawings

The Examiner has objected to the drawings because they do not show "controller 900," and because the reference numbers in paragraph 30 do not correspond with the element labels in Fig. 1.

In order to overcome this objection, Applicants are concurrently submitting Proposed Drawing Corrections for the Examiner's approval, which amends Fig. 1 to illustrate controller 900. Applicants have also amended Fig. 1 by re-labeling the temperature controller, and have provided a numerical label to the temperature control device in both Fig. 1 and in the main body of the specification to fully comply with MPEP §608.02(d).

Applicants have also amended Fig. 1 to illustrate "[E]lements 100 through 900 . . ." as described in paragraph [0028] of the main body of the specification.

Accordingly, reconsideration and withdrawal of this objection are respectfully requested.

Specification Amendments

Applicants have amended the specification in order to make paragraph [0028] and Fig. 1 consistent. No new matter in involved.

Rejection Under 35 U.S.C. § 112, 1st Paragraph

Claims 55-63 and 78 stand rejected under 35 U.S.C. § 112, 1st Paragraph. This rejection is respectfully traversed.

This rejection is moot because claims 55-63 and 78 have been canceled without prejudice.

Accordingly, reconsideration and withdrawal of this rejection of claims 55-63 and 78 are respectfully requested.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

Claims 43, 56, 67, 69, 72 and 81-83 stand rejected under 35 U.S.C. § 112, 2nd Paragraph. This rejection is respectfully traversed as moot because claims 43, 56, 67, 69, 72 ands 81-83 have been canceled without prejudice.

Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejection Under 35 U.S.C. § 102

Claims 37-40, 52-64, 67-69, 76, 78, 79 and 81-83 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,664,905 to Mayer. This rejection is respectfully traversed as moot because claims 37-40, 52-64, 67-69, 76, 78, 79 and 81-83 have been canceled without prejudice.

Claims 37-45, 47, 50, 51, 55-60, 63-67, 69-71, 73-78 and 80-83 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by U.S. Patent 5,709,894 to Julien. This rejection is respectfully traversed as moot because claims 37-45, 47, 50, 51, 55-60, 63-67, 69-71, 73-78 and 80-83 have been canceled without prejudice.

Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 52-61, 63, 68, 69, 78, 82 and 83 stand rejected under 35 USC §102(b) as being clearly anticipated by WO 9849903 to Stuhr as evidenced by Julien. This rejection is respectfully traversed as moot because claims 52-61, 63, 68, 69, 78, 82 and 83 have been canceled without prejudice.

Reconsideration and withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. §103

Claim 46 stands rejected under 35 USC §103(a) as being unpatentable over Julien as applied to claims 37-45, 47, 50, 51, 55-60, 63-67, 69-71, 73-78

and 80-83. This rejection is respectfully traversed as moot because claim 46 has been canceled without prejudice.

Reconsideration and withdrawal of this rejection of claim 46 are respectfully requested.

Claims 48 and 49 stand rejected under 35 USC §103(a) as unpatentable over Julien, as applied to claims 37-45, 47, 50, 51, 55-60, 63-67, 69-71, 73-78 and 80-83, in view of Meyer. This rejection is respectfully traversed as moot because claims 48 and 49 have been canceled without prejudice.

Reconsideration and withdrawal of this rejection of claims 48 and 49 are respectfully requested.

New Claims

Applicants have added new claims 84-122, which Applicants respectfully submit are allowable over the applied art at least because the claims from which they depend are allowable over the applied art, for reasons stated above.

Support for the specific values set forth in claims 84-122 is found throughout Applicant's originally filed Application including, for example, in Tables 1-17.

Applicants respectfully submit that none of the applied art applied in the rejection of canceled claims 37-83 anticipates or suggests or renders obvious the features of the methods, systems and products recited in claims 84-122.

Applicants also respectfully submit that Julien neither anticipates nor renders obvious the claimed invention for a number of reasons.

Firstly, Julien contains no disclosure of predetermining the nutrient value of his feed additive, or of changing the predicted nutrient value to achieve a predetermined end product nutrient level. Julien repeatedly refers to adding wheat middlings to glutamic acid fermentation or corn fermentation solubles as optional carrier to facilitate drying (Col 1, lines 33 thru 34; Col 5 line 7 and further states that the wheat middling carrier may be omitted "if not desired or required by the drying process used"(Col 6 line 65). Applicants have been unable to find any reference that the wheat middlings are added to provide any nutrient value or value of any kind except to facilitate drying.

Secondly, the crude protein value on a dry matter basis for glutamic acid fermentation solubles and corn fermentation solubles is 29.7% (Cornell University Dairy Cow Nutrition Model) and the crude protein value on a dry matter basis for wheat middlings is 18.5% (NRC publication Nutritional Requirements of Dairy Cows 7th revised addition 2001 pg. 279). Applicants respectfully submit that those familiar with the art will be aware that there is no possible combination of these materials will produce a mixture having 30% crude protein on a dry matter basis. 30% crude protein on a dry matter basis is the minimum level the applicants claim in their invention.

Thirdly, Applicants note that, in Tables 1, 3 and 5, Julien discloses the crude protein in complete diets used for *in vitro* studies and this disclosure

is consistent with, to those familiar with the art, levels normally found in complete diets for lactating dairy cows i.e. 16-19% crude protein. Julien also states that "[A]ll diets contained approximately 19% crude protein, of which 10-11% was provided by the basal mixture and 8-9% was provided by the additive sources."(Col. 7, lines 28---31.) This information does not provide any indication of the crude protein level in Julien's feed additive.

Fourthly, Applicants are unable to find any disclosure of the UIP levels in Julien's feed additive. As with crude protein, the UIP levels in the complete diets used in *in vitro* studies are disclosed in Tables 3 and 5. The levels of UIP in these complete diets are consistent with industry standards for UIP levels in complete diets for lactating dairy cows. In the *in vivo* (actual cows) studies performed by Julien, Julien reports that "[T]reatment rations were also deficient in undegraded intake protein (UIP), with the magnitude of the deficiency increasing as the feed additive made up a greater portion of the diet." (Col. 8, lines 37-40). Applicants respectfully submit that, to those familiar with the art, this would indicate that Julien's feed additive contains little or no UIP. Applicants' claimed products contain a minimum of 50% UIP.

Fifthly, Applicants claimed invention differs substantially from that of Julien, as evidenced by the fact that the objectives of the two inventions are at cross purposes. Whereas Julien provides "a novel source of ruminally degradable nitrogen sources in the forms of modified nonprotein nitrogen, peptides and amino acids" (Col 4, lines 41 thru 47), Applicants claimed invention provides

rumen undegradable protein RUP/UIP in high concentrations (over 50%), i.e., protein that is not degraded by the rumen.

Sixthly, Applicants have not been able to find a disclosure in Julien of specific amino acid levels in the feed additive.

Seventhly, Julien makes no mention of changing or improving the UIP level in his feed additive. In fact, several times Julien states the importance of not denaturing the nitrogen containing (protein) materials in his product (Col 1, lines 14-15; Col 5, lines 24 thru 27). Applicants claimed invention denatures protein to achieve the high levels of RUP/UIP in the end product.

Turning to the Meyer reference, Applicants respectfully submit that, while Meyer does disclose a crude protein level of greater than 30% of the starting material (col. 6, lines 45-50). Meyer uses a commercially available toasted soybean meal containing 50.86 percent crude protein in the reported experiments. However, Meyer does not mix this starting material with protein sources and/or amino acid sources, as claimed, to produce an enhanced end product.

Moreover, Meyer does not disclose or suggest any one of the other positively recited features in Applicants' claims.

Firstly, Meyer neither fully discloses nor suggests adding crude protein and/or amino acid content nutrient sources to the starting materials, as recited. In this regard, the Office Action does not provide objective factual evidence that Meyer's zinc salts are "crude protein and/or amino acid content

nutrient sources," as recited in claims 84-122, and Applicants respectfully submit that Meyer's added zinc salts do not constitute a crude protein and/or amino acid content nutrient added to the wet end of distillation or fermentation byproducts, as recited. Moreover, Meyer never refers to its zinc salts as a nutrient. Instead, Meyer discloses using zinc salts only as "chemical reagents" (col. 2, lines 55-61, for example). The burden is on the Office to establish by objective factual evidence that Meyer discloses its zinc salts as a nutrient. For reasons pointed out below, it appears that Meyer's zinc salts are not disclosed as a nutrient. Meyer warns of possible toxicity due to extremely high levels of zinc, as yet another indication that Meyer's zinc salts are not disclosed as nutrients in general, or as crude protein and/or amino acid content nutrient sources, as claimed. In this regard, Applicants respectfully submit that the conventionally desired range of zinc for cattle is in the range of 40ppm to 80ppm (NRC 2001 Dairy and 1996 Beef) compared with 2500ppm to 13000ppm zinc used in Meyer. Thus, Meyer does not disclose its zinc salts to be nutrients.

Secondly, Meyer does not disclose predetermining the nutrient value of his feed additive, or of changing the predicted nutrient value to achieve a predetermined end product nutrient level.

Thirdly, Applicants are unable to find any disclosure in Meyer of specific values of amino acid levels in the crude protein and in the RUP/UIP, let alone those that are recited in Applicants' claims.

Fourthly, Applicants are unable to find any disclosure of specific values of the post ruminal digestibility of the UIP/RUP in Meyer's additive, let alone values of over 60%, as claimed.

Applicants respectfully submit that there is no explicit disclosure in Meyer of the claimed invention and the Office Action has not presented objective factual evidence that Meyer implicitly (i.e., not just possibly or not just probably, but necessarily) discloses Applicants' claimed invention.

Additionally, Applicants respectfully submit the teachings of Julien and Meyers are at cross-purposes, which means that they teach away from being combined. In this regard, Applicants note that Julien heats its product for no more than three minutes (see above) whereas Meyer discloses heating its product for from 10 to 30 minutes (col. 5, lines 1-16) before extruding the product into pellets. Thus, one of ordinary skill in the art would not be motivated to look to Meyer to modify Julien to produce its product.

Nor does the Stuhr reference disclose or suggest Applicants' claimed invention. Stuhr allegedly "intends to improve and has the capability of determining/provide the target values (on Page 2, line 5 to Page 3, line 6)." Applicants respectfully submit that Stuhr adds nothing to Julien regarding the claimed invention.

Nor does Ethington (6,537,604), mentioned during the aforementioned interview, disclose Applicants' claimed invention. Ethington is surprisingly similar to Julien in both the dairy cow nutritional objectives of the end product and in the base ingredients utilized to produce the end product. Ethington references liquid byproduct from agricultural processing defining them (Col 3, lines 42-64) to include the identical fermentation byproducts utilized by Julien i.e. fermentation solubles from the production of mono-sodium glutamate and corn fermentation solubles. Additionally, Ethington identifies his second ingredient as "the fibrous portion from milling". These are defined (col. 4, lines 44-58) and include wheat middlings as in Julien's invention. Given the scope of the ingredients used by both Ethington and Julien anyone familiar with the art would recognize that there is no combination of these ingredients that could provide the crude protein levels as indicated in the applicants claimed invention. Further demonstration is that Julien continually refers to wheat middlings as an optional carrier (see above) and Ethington states "Fibrous portion from milling are commonly used in the animal feed industry as fillers, energy sources and roughage" (fiber) (Col 4, lines 51-53). Both inventors (Ethington and Julien) recognize that this range of ingredients provides little or no protein value to their end products only a functional value adding to the physical condition of their finished products. With the similarity of the patents from Ethington and Julien and the disclosures in both patents, the same remarks, as given above on Julien,

concerning crude protein levels, UIP levels, and amino acid levels in the crude protein and UIP apply to Ethington.

Accordingly, Applicants respectfully submit that claims 84-122 patentably define over any of the applied art.

Additional Cited References

Because the remaining references cited by the Examiner have not been utilized to reject the claims, but have merely been cited to show the state of the art, no comment need be made with respect thereto.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46,472, at (703) 205-8076, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: March 7, 2006

Respectfully submitted,

By Robert J. Webster

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Attachments: Replacement Drawing Sheet
Annotated Drawing Sheet

ANNOTATED SHEET

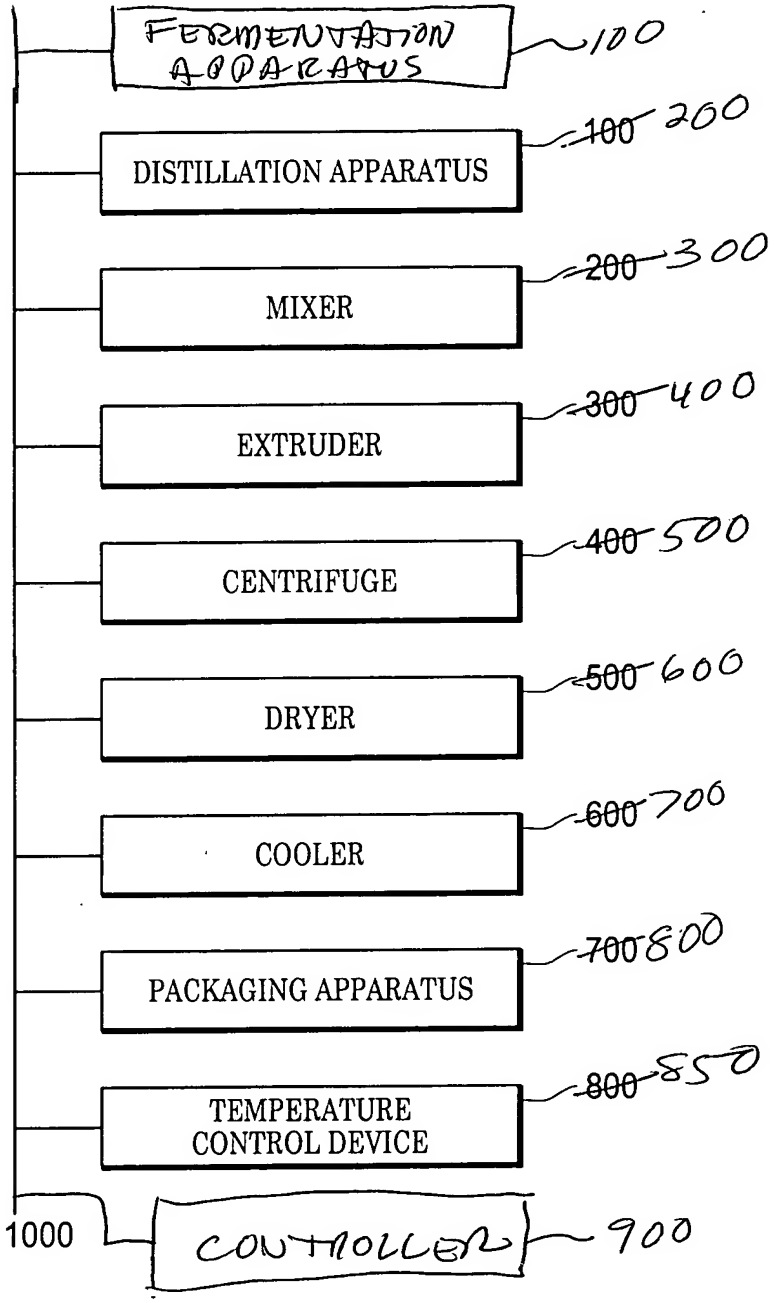

Fig. 1